

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-90 (cancelled).

91. (new) A method for modifying an image having pixels, comprising the steps of:
automatically identifying a main subject of the image, and
automatically altering pixel values of said image to emphasize said main subject, said altering following said identifying.

92. (new) The method of Claim 91 wherein said identifying further comprises segmenting said image into regions.

93. (new) The method of Claim 92 wherein said identifying further comprises generating a main subject belief map of said regions.

94. (new) The method of Claim 91 wherein said altering pixel values further comprises altering pixel color saturation.

95. (new) The method of Claim 91 wherein said altering pixel values further comprises altering pixel hue.

96. (new) The method of Claim 91 wherein said altering pixel values further comprises altering pixel luminescence.

97. (new) The method of Claim 91 wherein said altering pixel values further comprises altering pixel blur.

98. (new) The method of Claim 91 wherein said altering emphasizes said main subject by altering pixel values that are a part of said main subject.

99. (new) The method of Claim 91 wherein said altering emphasizes said main subject by altering pixel values that are not a part of said main subject.

100. (new) The method of Claim 91 wherein said altering further comprises desaturating the pixels that are not a part of said main subject.

101. (new) The method of Claim 100 wherein said desaturating further comprises:

calculating the luminance values for the pixels that are not a part of said main subject, and

replacing the color values of the pixels that are not a part of said main subject with respective luminance values.

102. (new) The method of Claim 91 wherein said altering further comprises enhancing saturation of the pixels that are a part of said main subject.

103. (new) The method of Claim 91 wherein said altering further comprises inverting the pixel hue values of the pixels that are a part of said main subject.

104. (new) The method of Claim 91 wherein said altering further comprises inverting the pixel hue values of the pixels that are not a part of said main subject.

105. (new) The method of Claim 91 wherein said identifying further comprises the steps of:

segmenting the image into a plurality of regions based on uniform image characteristics;

calculating a level of saliency for said plurality of regions, and
assigning a believe value to the pixels corresponding to said level of saliency.

106. (new) A system for modifying an image having pixels, comprising the steps of:
means for automatically identifying a main subject of the image,
and
means for automatically altering pixel values of said image to emphasize said main subject, said altering following said identifying.

107. (new) The system of Claim 106 wherein said means for identifying further comprises means for segmenting said image into regions.

108. (new) The system of Claim 107 wherein said means for identifying further comprises means for generating a main subject belief map of said regions.

109. (new) The system of Claim 106 wherein said means for altering pixel values further comprises means for altering pixel color saturation.

110. (new) The system of Claim 106 wherein said means for altering pixel values further comprises means for altering pixel hue.

111. (new) The system of Claim 106 wherein said means for altering pixel values further comprises means for altering pixel luminescence.

112. (new) The system of Claim 106 wherein said means for altering pixel values further comprises means for altering pixel blur.

113. (new) The system of Claim 106 wherein said means for altering emphasizes said main subject by altering pixel values that are a part of said main subject.

114. (new) The system of Claim 106 wherein said means for altering emphasizes said main subject by altering pixel values that are not a part of said main subject.

115. (new) The system of Claim 106 wherein said means for altering further comprises means for desaturating the pixels that are not a part of said main subject.

116. (new) The system of Claim 115 wherein said means for desaturating further comprises:

means for calculating the luminance values for the pixels that are not a part of said main subject, and

means for replacing the color values of the pixels that are not a part of said main subject with respective luminance values.

117. (new) The system of Claim 106 wherein said means for altering further comprises means for enhancing saturation of the pixels that are a part of said main subject.

118. (new) The system of Claim 106 wherein said means for altering further comprises means for inverting the pixel hue values of the pixels that are a part of said main subject.

119. (new) The system of Claim 106 wherein said means for altering further comprises means for inverting the pixel hue values of the pixels that are not a part of said main subject.

120. (new) The system of Claim 106 wherein said means for identifying further comprises the steps of:

means for segmenting the image into a plurality of regions based on uniform image characteristics;

means for calculating a level of saliency for said plurality of regions, and

means for assigning a believe value to the pixels corresponding to said level of saliency.

121. (new) A method of modifying an image having pixels, comprising the steps of:

automatically generating one or more belief values, each said belief value being associated with one of a plurality of regions of the image, said belief values each being related to the probability that the associated region is a main subject of the image;

following said generating, automatically altering pixel values in said plurality of regions of said image, in accordance with said associated belief values.

122. (new) The method of Claim 121 wherein said altering further comprises:

determining a saturation value for each pixel; and
altering the pixel saturation values according to said associated belief values.

123. (new) The method of Claim 121 wherein said altering further comprises:

determining a luminance value for each pixel; and
altering the pixel luminance values according to said associated belief values.

124. (new) The method of Claim 121 wherein said altering further comprises:

determining a hue value for each pixel, and
altering the pixel hue values according to said associated belief values.

125. (new) The method of Claim 121 wherein said altering further comprises:

determining a blur value for each pixel, and
altering the pixel blur values according to said associated belief values.

126. (new) A method of modifying an image having pixels, comprising:

automatically generating a main subject belief map containing values indicating the location of a plurality of regions in the image, said main subject belief map containing at least a first belief value associated with one of said plurality of regions, said belief values being related to the probability that the associated region is a main subject of the image; and

automatically altering pixel values in said plurality of regions of said image, in relation to said associated belief values, said altering following said generating.

127. (new) The method of Claim 126 wherein said altering further comprises:

determining a saturation value for each pixel, and
altering the pixel saturation values according to said associated belief values.

128. (new) The method of Claim 126 wherein said altering further comprises:

determining a luminance value for each pixel, and
altering the pixel luminance values according to said associated belief values.

129. (new) The method of Claim 126 wherein said altering further comprises:

determining a hue value for each pixel, and
altering the pixel hue values according to said associated belief values.

130.(new) The method of Claim 126 wherein said altering further comprises:

determining a blur value for each pixel, and
altering the pixel blur values according to said associated belief values.

131. (new) A method of modifying an image having pixels, comprising the steps of:

- automatically generating a main subject belief map containing values indicating the location of a plurality of regions in the image;
- determining a threshold belief value discriminating among said regions, a main subject region and background region;
- automatically altering pixel values in said plurality of regions of said image, said altering following said generating, said altering being different in said main subject region and said background region.

132. (new) The method of Claim 131 further comprising segmenting said image into said regions.

133. (new) The method of Claim 131 wherein said altering further comprises:

- determining a saturation value for each pixel; and
- altering the pixel saturation values according to said associated belief values.

134. (new) The method of Claim 131 wherein said altering further comprises:

- determining a luminance value for each pixel; and
- altering the pixel luminance values according to said associated belief values.

135. (new) The method of Claim 131 wherein said altering further comprises:

- determining a hue value for each pixel, and
- altering the pixel hue values according to said associated belief values.

136. (new) The method of Claim 131 wherein said altering further comprises:

- determining a blur value for each pixel, and

altering the pixel blur values according to said associated belief values.

137. (new) The method of Claim 131 wherein said altering further comprises desaturating the pixels of said background region.

138. (new) The method of Claim 137 wherein said desaturating further comprises:

determining the luminance values for the pixels of said background region; and

replacing the color values of the pixels of said background region with respective luminance values.

139. (new) The method of Claim 131 wherein said altering further comprises enhancing saturation of the pixels of said main subject region.

140. (new) The method of Claim 131 wherein said altering further comprises inverting the pixel hue values of the pixels that are a part of said main subject region.

141. (new) The method of Claim 131 wherein said altering further comprises inverting the pixel hue values of the pixels that are part of said background region.

142. (new) A method of modifying an image having pixels, comprising the steps of:

automatically generating a main subject belief map containing values indicating the location of a plurality of regions in the image;

determining a main subject threshold belief value and a background threshold belief value, said threshold belief values discriminating a main subject region, a secondary subject region, and a background region; and

automatically altering pixel values in said plurality of regions of said image, said altering following said generating, said altering being different in each of said main subject, secondary subject, and background regions.

143. (new) The method of Claim 142 further comprising segmenting said image into said regions.

144. (new) The method of Claim 142 wherein said altering further comprises:

determining a saturation value for each pixel; and
altering the pixel saturation values according to said associated belief values.

145. (new) The method of Claim 142 wherein said altering further comprises:

determining a luminance value for each pixel; and
altering the pixel luminance values according to said associated belief values.

146. (new) The method of Claim 142 wherein said altering further comprises:

determining a hue value for each pixel, and
altering the pixel hue values according to said associated belief values.

147. (new) The method of Claim 142 wherein said altering further comprises:

determining a blur value for each pixel, and
altering the pixel blur values according to said associated belief values.

148. (new) The method of Claim 142 wherein said altering further comprises desaturating the pixels of said background region.

149. (new) The method of Claim 148 wherein said desaturating further comprises:

determining the luminance values for the pixels of said background region; and

replacing the color values of the pixels of said background region with respective luminance values.

19 150. (new) The method of Claim 142 wherein said altering further comprises enhancing saturation of the pixels of said main subject region.

151. (new) The method of Claim 142 wherein said altering further comprises inverting the pixel hue values of the pixels that are a part of said main subject region.

152. (new) The method of Claim 142 wherein said altering further comprises inverting the pixel hue values of the pixels that are part of said background region.
